



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,944	08/28/2006	Oussama Khatib	L2005.0025/P025	2614

24998 7590 06/22/2010  
DICKSTEIN SHAPIRO LLP  
1825 EYE STREET NW  
Washington, DC 20006-5403

EXAMINER
----------

PANI, JOHN

ART UNIT	PAPER NUMBER
----------	--------------

3736

MAIL DATE	DELIVERY MODE
-----------	---------------

06/22/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,944	<b>Applicant(s)</b> KHATIB ET AL.	
	<b>Examiner</b> JOHN PANI	<b>Art Unit</b> 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,10 and 37-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,10 and 37-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/24/2010 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 9, 10, 37, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat. No. 6,096,004 to Meglan in view of "A comparison of operating room crowding between open and laparoscopic operations" to Alarcon et al. ("Alarcon").

#### In reference to Claims 1 and 40

Meglan discloses a haptic feedback apparatus (Fig. 2) comprising: an elongate intervention device (at least 10', 12', 14', 50, 56, 10", 12", and 14") carrying at least one

Art Unit: 3736

force sensor (at least one of 114, 116 of 50; note that a broad definition of "carry" is "to wear, hold or have around one"; see "carry". Dictionary.com; definition based on Random House Dictionary. accessed 2/18/10) and operable to be inserted into a human or animal subject (see Fig. 2), the at least one force sensor arranged to sense a remote force in the human or animal subject acting on the intervention device; a force applicator (52) arranged to apply a force to the elongate intervention device; a controller (56, 66) arranged to control the force applied to the intervention device by the force applicator, the controller being connected to the at least one force sensor and configured to calculate the applied force based on the remote force, the applied force being an amplification of the remote force (see at least col. 5 lines 15-35), wherein the force applicator comprises a resilient member (at least 120, 122, 124, 126, 140) arranged to apply the said force to the intervention device, and wherein the apparatus further comprises a sensor (at least other of 114, 116 of 50) arranged to detect frictional force between the resilient member and the intervention device.

4. However, it is unclear whether the elongate intervention device and force sensor together could be inserted into a human or animal subject/simulated human animal model, as Meglan is silent regarding the size of the system. This limitation is interpreted to be essentially a limit on the size of the device. The phrase "human or animal subject" provides a wide range of possible dimensions, for example the blue whale can be over 100 feet long (<<http://www.acsonline.org/factpack/bluewhl.htm>>/). The system of Meglan is disclosed as being used in a laparoscopic operating setting (see col. 1 lines 32-50), therefore it would have at least been obvious to one having ordinary skill in the

Art Unit: 3736

art at the time of the invention to have made the system of a size small enough that it would fit within a laparoscopic operating room.

Alarcon discloses a size of a laparoscopic operating room to be 20 ft by 20 ft (see pg. 917, "Discussion"), therefore it would have been obvious to one having ordinary skill in the art to have fit within a room of these dimensions. One of ordinary skill in the art would further be likely to make the system significantly smaller than the dimensions of the operating room itself, so that it would take up minimal room and thereby allow the medical staff to manipulate it and work around it while conducting the procedure. An object that would fit within a room of these dimensions could be inserted into at least into some animals, as evidenced by the wide range of animal sizes. Additionally, because a model of any size could be constructed, the system would fit within a model as well.

In reference to Claim 2

The haptic feedback apparatus of claim 1 (see above) wherein the detected frictional force is used to control the amount of applied force (col. 5 lines 15-35, col. 7 lines 10-20).

In reference to Claim 3

The haptic feedback apparatus of claim 1 (see above) further comprising a tracking device for tracking rotational movement of the intervention (see col. 6 lines 53-55).

In reference to Claim 4

The haptic feedback apparatus of claim 1 (see above) further comprising a tracking device for tracking the linear movement of the intervention device (see col. 6 lines 53-55).

In reference to Claim 5

The haptic feedback apparatus of claim 1 (see above) further comprising a comparator (56) for comparing the remote force with a reference force (Meglan teaches setting the desired force applied at the slave to some multiple of the force sensed at the master).

In reference to Claim 6

The haptic feedback apparatus according to claim 1 (see above) wherein the intervention device and the at least one force sensor are suitable for insertion into a simulated human model (depending on size, shape, etc. of the human model).

In reference to Claim 7

The haptic feedback apparatus of claim 6 (see above) wherein the remote force is generated using computer simulation. (The Meglan device would be capable of receiving a remote force from a computer simulation).

In reference to Claim 9

Meglan teaches the haptic feedback apparatus of claim 8 (see above) and teaches the at least one force sensor is disposed near or at a tip of the intervention device (see Fig. 3).

In reference to Claim 10

The haptic feedback apparatus according to claim 7 (see above) further comprising a plurality of force sensors disposed along a length of the intervention device and the controller is connected to each of the plurality of force sensors (see Fig. 3).

In reference to Claim 37

The haptic feedback apparatus according to claim 9 (see above) wherein the at least one force sensor is embedded in the intervention device (see Fig. 3; note that 50 is interpreted as part of the "intervention device").

In reference to Claim 39

The haptic feedback apparatus of claim 10 (see above) wherein the plurality of force sensors are embedded in the intervention device (see Fig. 3, note that 50 is interpreted to be part of the "intervention device").

5. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meglan in view of US Pat. No. 5,957,833 to Shan ("Shan").

Meglan teaches the apparatus of claim 10 (see above), but does not explicitly disclose that the plurality of force sensors are arranged to detect a shape of the intervention device. Shan teaches an endoscope (38) which includes a plurality of strain gauges (30) which are arranged to detect a shape of the intervention device so that the user can monitor its position within the body (see entire disclosure). It would have been obvious to one having ordinary skill in the art at the time of the invention to

have modified Meglan by including a plurality of strain gauges along the catheters so that the user could monitor the shape of the device within the body as taught by Shan.

### ***Response to Arguments***

6. Applicant's arguments, see pg. 5 "Claim Objections" and "Claim Rejections -35 U.S.C. 112", filed 5/24/2010, with respect to claims 1-10 and 37-39 have been fully considered and are persuasive. The objection and rejection of 2/23/10 has been withdrawn.

7. Applicant's remaining arguments filed 5/24/2010 have been fully considered but they are not persuasive. In response to Applicant's arguments regarding the alleged "first point of novelty", the claim does not require that the entire elongate intervention device be capable of being inserted, and Fig. 2 clearly shows that part of the elongate intervention device (as defined above) can be inserted into a body 54.

8. In response to Applicant's various arguments regarding the alleged "second point of novelty" that the system of Meglan does not describe "an elongate intervention device...operable to be inserted into a human or animal subject [simulated human or animal model] together with the at least one force sensor", the Examiner respectfully disagrees. The term "operable" has been interpreted to mean "capable of being put into use, operation, or practice" ("operable." Dictionary.com Unabridged. Random House, Inc. 18 Jun. 2010. <Dictionary.com <http://dictionary.reference.com/browse/operable>>.), and the only structural limitation this appears to place on the device is that the system's size be such that the force sensor fit within a human or animal/human model or animal



model at the same time as another portion of the intervention device. As detailed above, the Examiner submits that it would be obvious to size the system such that 50 could fit within an animal or animal model.

9. In response to Applicant's arguments regarding the alleged "third point of novelty", the Examiner first notes that claim 1 does not require that the elongate intervention device and force sensor are operable to be inserted into the human/animal/model while the force sensor senses a remote force. The claim has been interpreted to be met by a device that could both be inserted into a human/animal/model and which has a force sensor which can sense a remote force from the same human/animal model, but the device need not be configured for each of these things to occur at the same time. As shown above, each function could be met individually, thus the Examiner submits that the limitation is disclosed. Further, it is noted that on pg. 8, the Applicant appears to have misinterpreted the Examiner's suggestion that one of ordinary skill in the art would size the system to fit within a human or animal. Particularly, the Examiner does not suggest that the system would be resized *in order to* fit within a human or animal; rather, the suggestion was that one of ordinary skill in the art would make the device of a small size for other reasons (i.e. portability, to fit within a room, etc.) and that because of these modifications, the system would then be capable of fitting within a human or animal. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from

Art Unit: 3736

the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN PANI whose telephone number is (571)270-1996. The examiner can normally be reached on Monday-Friday 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JP/ 6/18/10

/Max Hindenburg/

Application/Control Number: 10/590,944

Page 10

Art Unit: 3736

Supervisory Patent Examiner, Art Unit 3736